Subject: Re: mean() function
Posted by Paolo Grigis on Wed, 11 Jan 2006 14:19:24 GMT
View Forum Message <> Reply to Message

>
> [...]
>
> I suppose math libraries or compilers changed between 6.1 and 6.2.
>
> Once the values you are adding differ by 6-7 orders of magnitude,
> precision is completely lost for single precision floats.
>
> IDL> print, total(replicate(1.0, 10^7))
> 1.00000e+07
> IDL> print, total(replicate(1.0, 10^8))
> 1.67772e+07
> IDL> print, total(replicate(1.0D0, 10^8))
> 1.0000000e+08

I have no problem with that, understanding the argument of finite precision and all that, but there is one thing which has me puzzling (all commands issued from the same linux machine)

IDL Version 5.4 (linux x86). (c) 2000, Research Systems, Inc.

IDL> help,total(replicate(1.,1d8))
<Expression> FLOAT = 1.67772e+07
IDL> exit

IDL Version 5.5a (linux x86). (c) 2001, Research Systems, Inc.

IDL> help,total(replicate(1.,1d8))
<Expression> FLOAT = 6.71089e+07
IDL> exit

IDL Version 5.6 (linux x86 m32). (c) 2002, Research Systems, Inc.

IDL> help,total(replicate(1.,1d8))
<Expression> FLOAT = 1.00000e+08
IDL> exit

I was thinking that the result of the operation would depend on the hardware used, but I would have guessed that on the same machine no difference would be seen between different versions of IDL, since all of them should represent floats in the same way...

So what's happening here? Different compiler optimizations?

Ciao,
Paolo

>
> Cheers, Ken